

Supply Chain Management in New Zealand

Practices, Strategy and Performance

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Note: This report provides an overview of results of an empirical investigation of supply chain management practices in New Zealand. The project was conducted as part of Hons final project of Julie Donovan. We are thankful for a support from NZPICS and NZMEA, who provided access and contacts of supply chain professionals in their network. The data was collected in 2013 – however the report was made publicly available in 2017. A short summary of the results appeared in NZPiC’s Spring 2013 magazine on pages 20-21 titled “Do Collaborative Supply Chain Practices Improve Supply Chain Performance?”

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Executive Summary

Supply chain management is an important part of New Zealand (NZ) economy yet relatively little empirical evidence is available about the practices of NZ firms and their impact on supply chain performance. In this study, we aim to fill this gap. We have partnered with two associations in NZ, NZPICS (Association of Operations & Supply Chain Professionals) and NZMEA (New Zealand Manufacturers and Exporters Association) and asked their members to provide us with the data on their firms and supply chains; namely their locations, industry sector, customer bases, outsourcing activities, competitive priorities, supply chain management practices (such as information sharing) and performance of their supply chain. We have collected the data through a survey in July-September 2013 and received 145 responses.

In order for supply chain networks to compete effectively, they must share information with to be able to jointly make decisions and problem solve and this must be made with an external perspective including its supply chain partners. The results from this survey found that high performing companies are using collaborative supply chain practices to improve their supply chain management capabilities in quality, flexibility and delivery. These performance capabilities are seen to be “customer centric” outcomes that reflect an organisation’s objective of appealing to a target customer segment that is not necessarily cost focused or price-sensitive. Apart from this relation between supply chain practices and performance, we also provide descriptive statistics on the current status of supply chain practices in New Zealand.

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About the Authors

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Pavel Castka

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Mark Hanna

A native of Darjeeling, India, Dr Hanna is Professor of Operations Management in the College of Business Administration at Georgia Southern University. He formerly served as Associate Dean of the College and Chair of the Department of Information Systems and Logistics. He was on the faculty at the Richard T. Farmer School of Business Administration at Miami University from 1990 – 2001. He earned a Ph.D. in Industrial Management and an M.S. in Management from Clemson University. At Georgia Southern, Professor Hanna has primarily taught Operations Management and Quality Management courses in the BBA, MBA, WebMBA, and Ph.D. programs. In addition, he occasionally teaches a freshman orientation class using the global automobile industry as the research theme. His teaching has been recognized with the 2011 W.A. and Emma Lou Crider Award for Excellence in Teaching and the 2012 Georgia Southern University Award for Excellence in Contributions to Instruction.



Professor Hanna is a proponent of quality management, business excellence, six-sigma, and lean; especially their underlying process-oriented participative management practices. He has supported practitioner development in operations through service to the Ohio Manufacturer's Association, the Association for Quality and Participation and other organizations. He is a member of the Production and Operations Management Society, Decision Sciences Institute, and APICS: The Association for Operations Management

About the Participating Associations

NZPICS

NZPICS is a not for profit membership organisation offering education programmes for supply chain and operations management professionals within New Zealand. As the International Associate of APICS, the Association for Operation Management, NZPICS is the provider of the APICS Certification courses and delivers courses in Auckland and across New Zealand. With a governance committee and a small office team, NZPICS has been delivering supply chain courses for over 30 years. The governance committee consists of President, Vice President, Treasurer and elected members. The committee usually has around 10 members elected at the Annual General Meeting each August. There are over 500 members and consist of Production and Operation Managers, Logistics personnel and Procurement Managers.



NZMEA

The New Zealand Manufacturers and Exporters Association (NZMEA) was formed through the merger of the Canterbury Manufacturers' Association and the New Zealand Engineers Federation in 2007. The Association's efforts fall into two parts: they advocate through media and lobbying efforts on regulation and government policies that generally encourage the growth of the traded economy, and they directly support the development of member companies through networking, peer support and training programmes. The Association provides support for members' staff via training programmes and events relevant to the needs of manufacturers and exporters. The Association provides a clear voice for manufacturers and exporters by promoting a policy framework that supports the tradable economy through the media and lobbying activities. The Association advocates policies that aim to stabilise the New Zealand dollar, balance taxes across all forms of income including capital gains and incentivise investment in research and development, capital plant, patents, early stage real economy investment, and up skilling staff as a competitive response to similar incentives in place in other jurisdictions.



1. Introduction

International research indicates that collaborative supply chain management (SCM) practices are necessary in achieving superior supply chain performance for an organization (Baihaqi & Sohal, 2012; Chen, Sohal, & Prajogo, 2012; Li, Ragu-Nathan, Ragu-Nathan, & Subba Rao, 2006; Prajogo, Chowdhury, Yeung, & Cheng, 2012). The basic argument is that by collaborating firms can create networks of firms that address the needs of participating firms faster in more reliable and cost effective ways. The collaborative SCM practices are typically determined by an ability of a firm to collaborate externally (e.g. by creating strategic partnerships with suppliers), to collaborate internally (e.g. by breaking down the organizational silos mentality) and by exchanging information – rapidly and accurately.

Even though the findings from across the globe indicate the positive role of collaborative supply chain management (SCM) practices in superior performance (Prajogo et al., 2012), there is a lack of research on this topic in New Zealand. We should also mention that many argue that supply chain management field in NZ is under-researched (Basnet, Corner, Wisner, & Tan, 2003). For the purpose of this study, -we have partnered with two associations in New Zealand, NZPICS (Association of Operations & Supply Chain Professionals) and NZMEA (New Zealand Manufacturing and Exporters Association) and asked their members to provide us with the data on their firms and supply chains; namely their locations, industry sector, customer bases, outsourcing activities, competitive priorities, supply chain management practices (such as information sharing) and performance of their supply chain. We have collected the data through a survey in July-September 2013 and received 145 responses.

This report is organized in the following manner. In Section 2, we provide details on research methodology. Section 3 contains descriptive statistics of firms that have participated in this study. Section 4 contains main findings from the study. In this section we present the mean scores for every question from the survey instrument. Section 4 contains findings on competitive priorities, individual collaboration practices and firms' performance. In Section 5, "Analysis and Discussion", we present results of several statistical analyses that we have performed with the data. Here, we aggregate the collaborative practices and firms' performance results into constructs and performed regression analysis to determine how collaborative practices determine firms' performance. We conclude with a discussion on the status quo of SCM understanding in New Zealand and outline pathways for future research in this area.

2. Research Methodology

The research was conducted by means of an email questionnaire survey. The survey instrument was developed based on previous studies and modified in consultation with NZPICS and NZMEA. A seven-point Likert scale was used and respondents were asked to determine the status of their collaborative supply chain practices and determine performance of their supply chains. For the collaborative supply chain practices, the respondents were asked to answer by selecting one of the descriptions that ranged from 1 (strongly disagreeing) to 7 (strongly agreeing). For supply chain performance, the respondents were asked to assess their organisation's performance relative to the competitors in their marketplace, the scale ranging from 1 (weakest in the industry) to 7 (strongest in the industry). Questions from previously published international studies were selected as providing the basis for the survey representing specific collaborative SCM practices. The specific constructs included *Strategic Supplier Partnerships*, *Customer Relationships*, *Information Quality* and *Internal Collaboration* (Baihaqi & Sohal, 2012; Chae, Yen, & Sheu, 2005; Chen et al., 2012; Li et al., 2006; Prajogo et al., 2012). The performance measures used were *quality*, *flexibility*, *delivery performance*, *cost efficiency* and *innovation* (Li et al., 2006; Prajogo et al., 2012).

The questionnaire was emailed to members of NZPICS and NZMEA. NZPIC's 538 membership consists of operations managers as well as other supply chain professionals. NZMEA's 5000 membership consists mainly of CEO's of manufacturing and exporters firms.

3. Descriptive statistics of the participating firms

This section provides details of participating firms in our study, namely in terms of industry sector; job description of the respondents; size of the participating firms; the location of the firm; the locations of their customer bases; firms' position in the supply chain continuum and the data on how many activities are outsourced to another organisation or kept in-house.

3.1. Industry Sectors

Figure 1 shows an overview of firms that have participated in our study. Over two thirds of the respondents were from the manufacturing sector (70%) and the next largest group were from Agriculture, Forestry and Fishing (11%). Five percent were from the wholesale trade. The other sectors are only marginally represented in our sample. This stratification in our sample is representative of the membership bases of the participating organisations – dominated by respondents from manufacturing sector. Though such representation is not reflecting the NZ economy, the sample provides an important outlook on firms that are important players in supply chain management. We do recognize the limitations of our sample and discuss this further in Section 5 of this report.

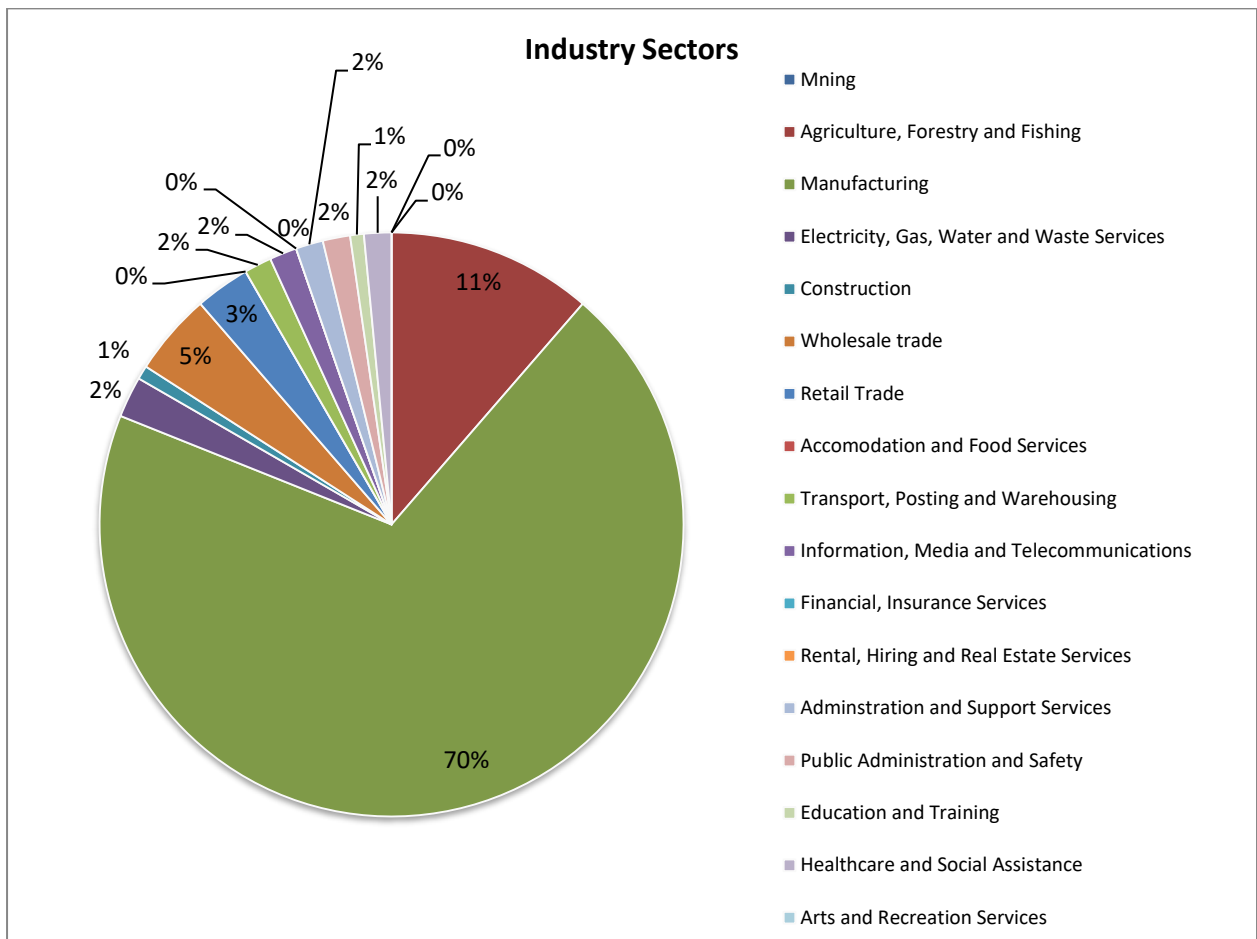


Figure 1: Representation of Industry Sectors in the sample

3.2. Main Job Description

Figure 2 shows the main job description of our respondents. 19% of the respondents confirmed they were supply chain managers, 12% for CEO's and operations managers, 10% were logistics managers and purchasing, production and demand managers were each 9%. It is noticeable that there are several positions in NZ firms that overlook supply chain management. This is perhaps reflective of a significant proportion of small firms who may not have a dedicated Supply Chain (SC) manager but rather a manager responsible for several functional areas. These findings contrast with survey reports from Australia, where a majority of respondents tend to be dedicated SC managers (GS1, 2008).

Main Job Description

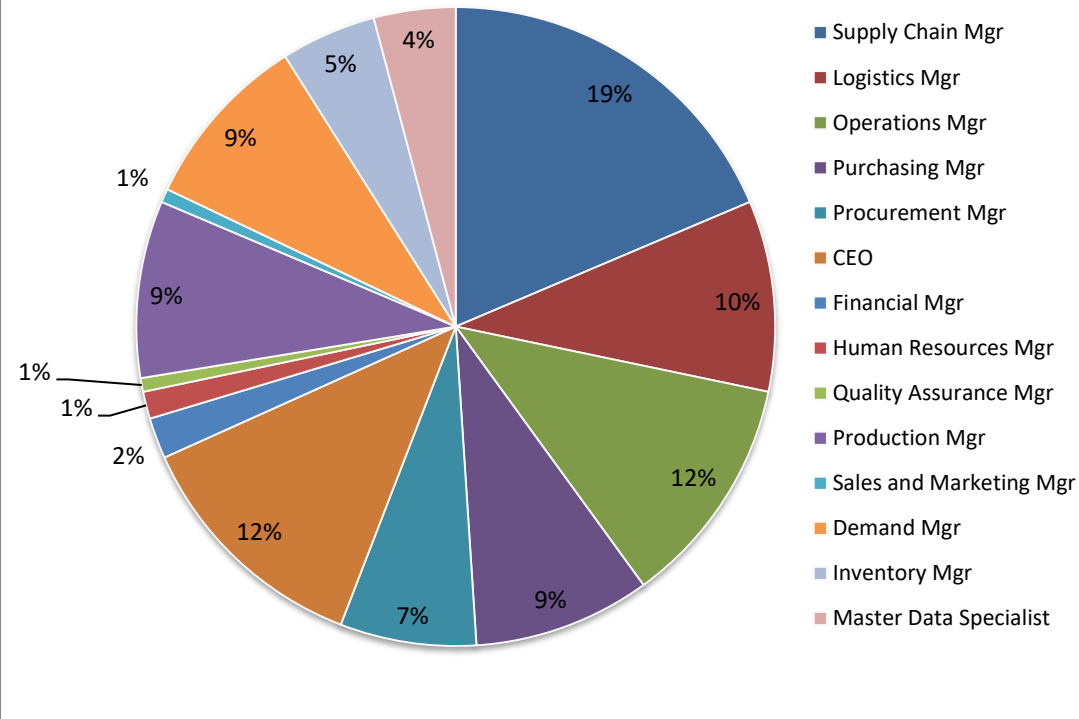


Figure 2: Main Job Description

3.3.Size of Organisations

Figure 3 shows the distribution of data with respect to the number that participating firms employ. Nearly half of the respondents were from medium sized firms (45%) that employ between 5—499 employees. Large firms (who employ over 500 people) make up 29% of our sample and 26% are small firms with 1049 employees.

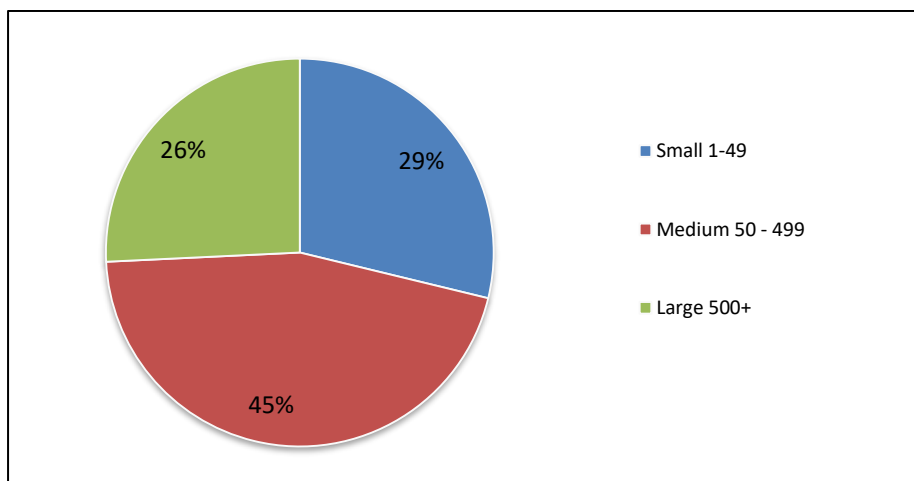


Figure 3: Size of Organisations

3.4. Organisation Location

Figure 4 shows that most of the firms in our sample are located in the North Island with 101 respondents confirming that they had offices based in the North Island. Fifty six were either located solely in the South Island or located in both the South Island and the North Island. 15 of the respondents stated that their organisation had offices overseas.

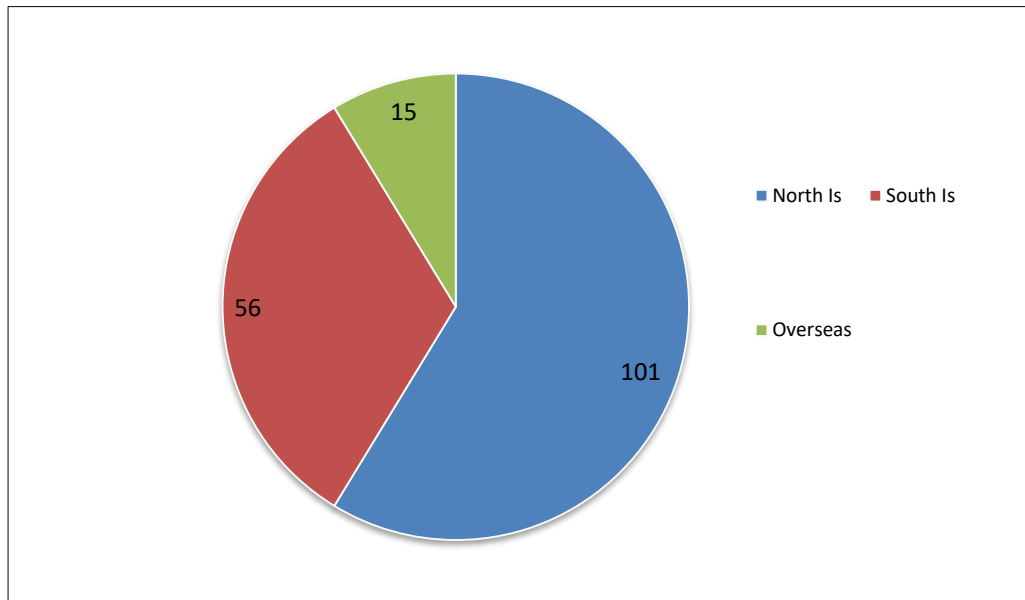


Figure 4: Organisation Location

3.5. Location of Main Customers

Figure 5 provides an overview of major markets of firms participating in this research. It shows that two thirds of NZ firms (68%) from our sample serve the “Australia-NZ-Pacific” market, combining domestic market with an international trade with bordering countries. Only 6% of firms served in the global market place and 26% of firms focus purely on the domestic market.

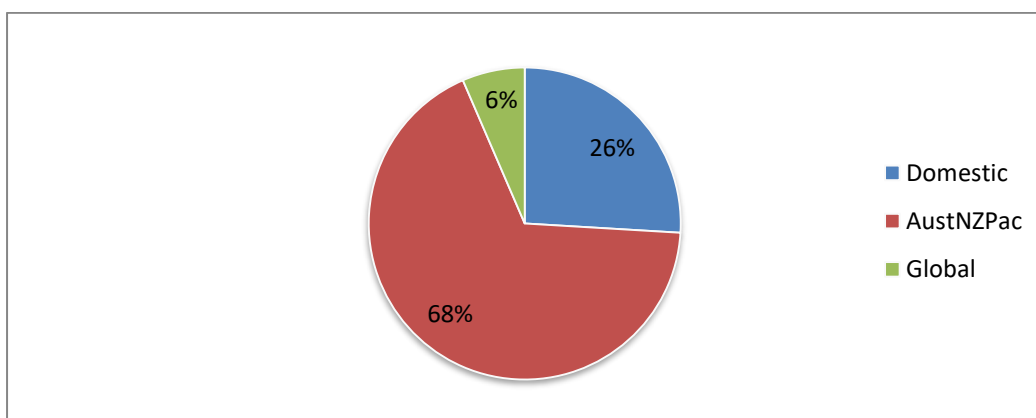


Figure 5: Locations of Main Customers

3.6.Position in Supply Chain

Figure 6 presents a supply chain continuum – from upstream (2nd tier suppliers) to downstream (retailers). We asked our respondents to indicate their position on this continuum. Figure 6 indicates that most of the organisations were positioned as 1st and 2nd tier suppliers while 31% of respondents stated that they were the end product manufacturer (positioned in the middle of the supply chain continuum). Wholesaler and Distributors make up 26% in our sample whilst Retailers 5%.

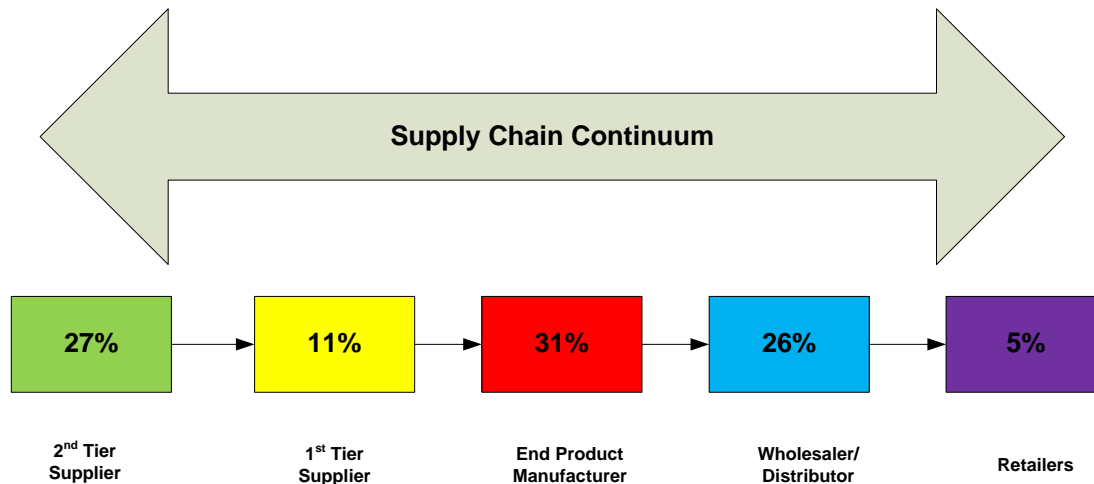


Figure 6: Supply Chain Position

3.7.Outsource vs. In-house Activity

We have also asked the respondents to indicate the extent to which they use outsourcing in their supply chain management. Figure 7 show that 58% of organisations performed most activities in-house with 34% organisations performing all activities in-house. 27% of organisations mainly outsourced or outsourced all of their company activities.

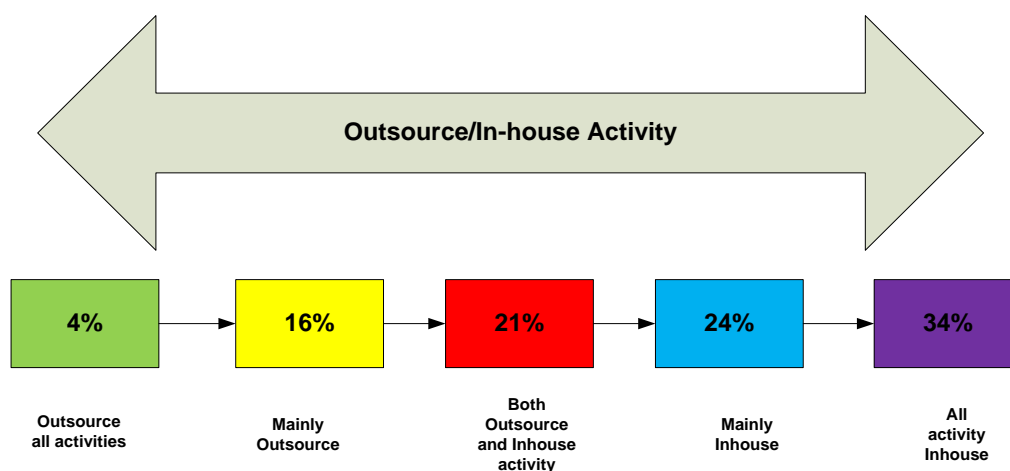


Figure 7: Outsource vs. In-house Activity

4. Key Findings

Our questionnaire comprised of a set of questions related to competitive priorities of firms, collaborative supply chain practices (strategic supplier relationships, customer relationships, information sharing, information quality and internal collaboration) and supply chain performance. In this section, we report the findings on each set of questions (please see the full questions in Table 1, Section 5 of this report). Each question used a 7-point Likert scale and the respondents were asked to indicate to the extent to which they organisational practice mirror the statement. The scale ranged from 1=strongly disagree to 7=strongly agree. Few questions use a modification of the 7-point scale – such instances are detailed in the individual subsections.

4.1.Competitive Priority

The survey asked the respondents to indicate the degree of emphasis that their organisation places on five competitive priorities namely: cost, quality, flexibility, dependability and innovation. The respondents were asked to choose an answer that best reflects the organisation's position. These competitive priorities were defined as:

- Cost (cost to produce goods and services that lead to price reduction)
- Quality (meeting specifications and meeting product/service performance and reliability)
- Flexibility (to increase or decrease product volume and response to a change in lead time)
- Delivery (dependability of delivery , reliability and speed)
- Innovation (research and development of new products and/or services)

The results are presented in Figure 8. The results demonstrate the major focus of participating firms is to focus on quality with 98% of respondents answered that they either somewhat agreed, agreed or strongly agreed with the survey statement. Dependability also scored high with 95% respondents stating that dependability best reflects one of their most important organisations priorities. Our dimensions, such as innovation and flexibility, show more even distribution, which suggests that less firms are focused on these dimensions. Such a result is to be expected as innovation and flexibility are typically associated with firms that compete in niche markets. Perhaps a more important question is whether competitive priorities impact the extent of collaborative practices. We will return to this question in our discussion section of this report.

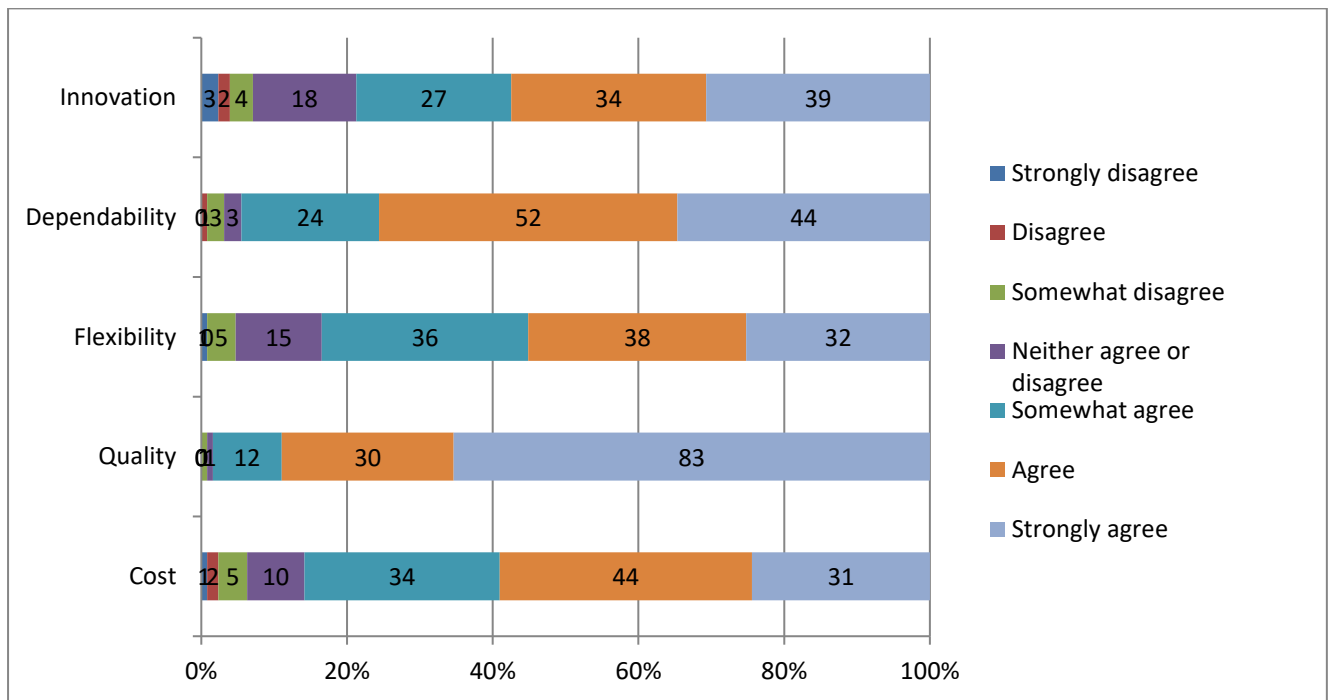


Figure 8: Competitive priorities of participating firms

4.2.Information Sharing Practices

Competition is not just between individual firms but between supply chain networks and that integration does not happen with one firm making all the decisions but must be made with an external perspective including its supply chain partners. Respondents were asked to rate six statements related to information sharing practices. The results are presented in Figure 9.

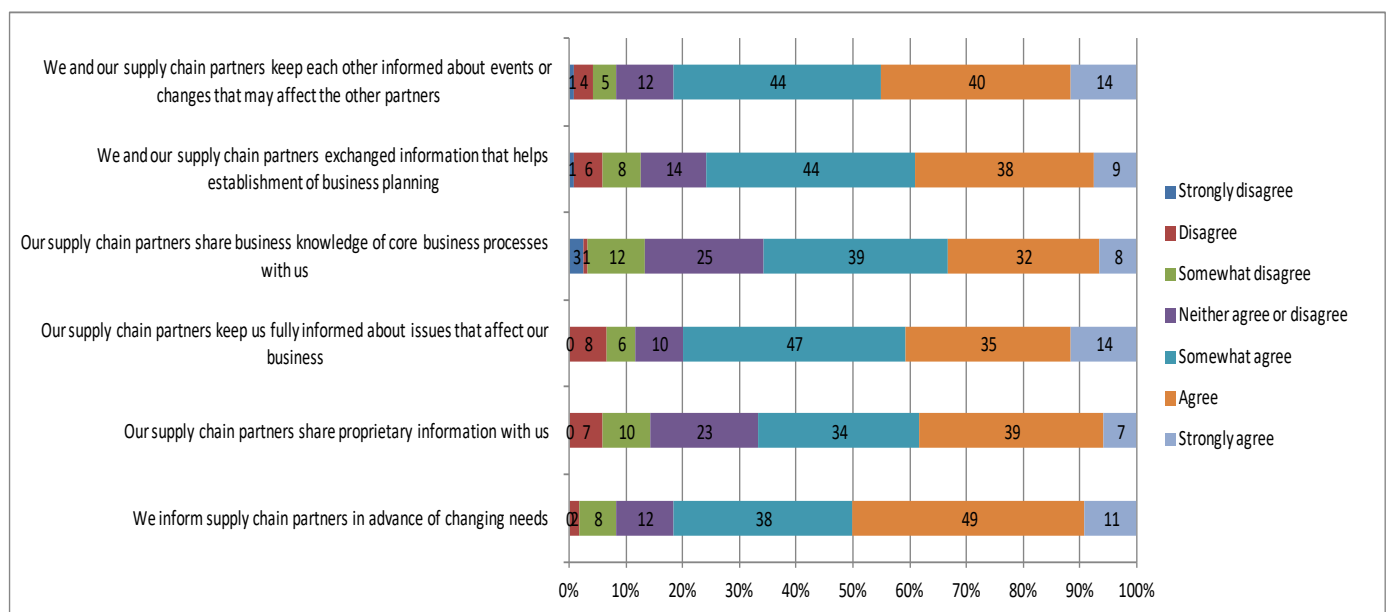


Figure 9: Information Sharing Practices

Respondents answered that they kept supply chain partners aware of changing events or changes that may affect other partners and needs (82%) somewhat to strongly agreeing to the statement. All statements rated highly but sharing core business processes (66%) and proprietary information (65%) was not so highly rated. This would suggest that information sharing occurred as a reactive move e.g. reacting to changing needs than a planned process (e.g. part of business process planning). Combined, the findings suggest that a majority of firms understand and practice information sharing as an exchange of basic information rather than an exchange of knowledge.

4.3. Information Quality Practices

In order to effectively share information, firms need to transfer the information in a timely and reliable manner. We asked our respondents to indicate the status of the quality of their knowledge sharing. Respondents were asked to rate five statements that are typically used to assess the information quality practices. The results are presented in Figure 10.

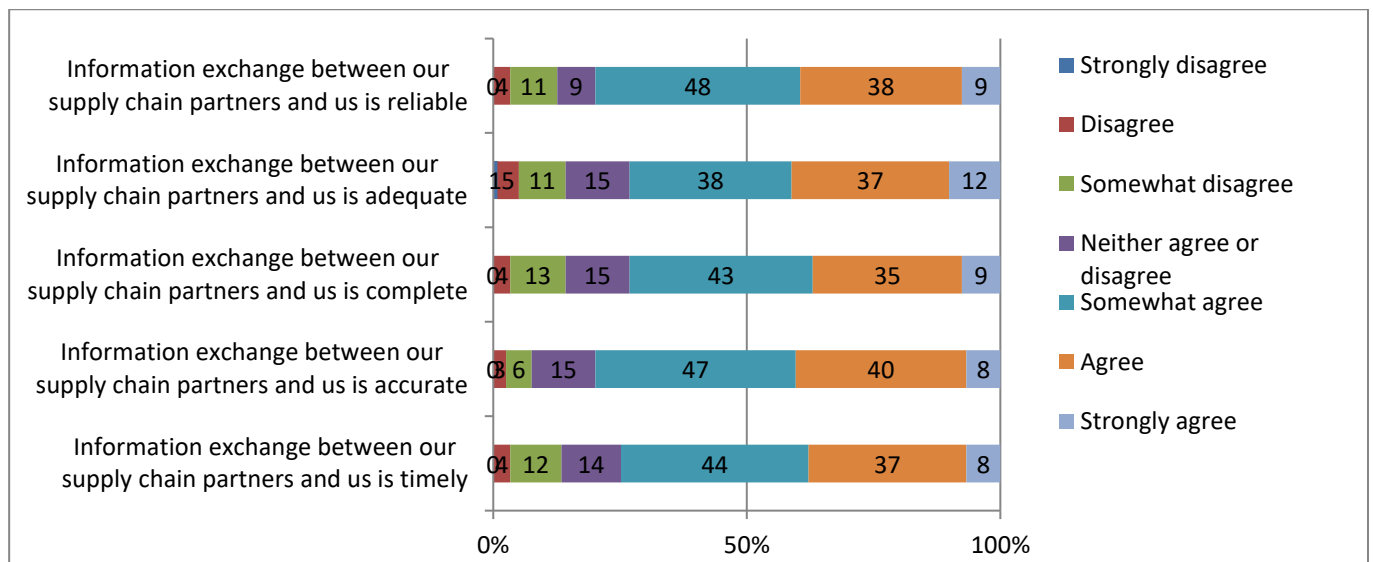


Figure 10: Information Quality Practices

Respondents felt that information quality practices were reliable and accurate with 80% somewhat agreeing to strongly agreeing with those statements, and rate adequacy, completeness and timeliness slightly less favourably. However, on average such differences are only marginal. This suggests that amongst the measures of information quality, there is not a single measure that would stand out to describe the practices in supply chain. Perhaps more important question is whether information quality practices lead to better performance – a question that we address later in the report.

4.4. Internal Collaboration

In order to facilitate internal collaboration, a company must first possess a “strategic orientation toward cooperative efforts to synchronise and converge intra-firm and inter-firm operational and strategic capabilities

into a unified whole”(Min & Mentzer, 2004). However without top management support which includes leadership and commitment to change, it is difficult to implement supply chain management integration. We asked the respondents to indicate, which practices are used to facilitate internal collaboration. Respondents were asked to rate five statements using a 1-7 Likert scale. The results are presented in Figure 11.

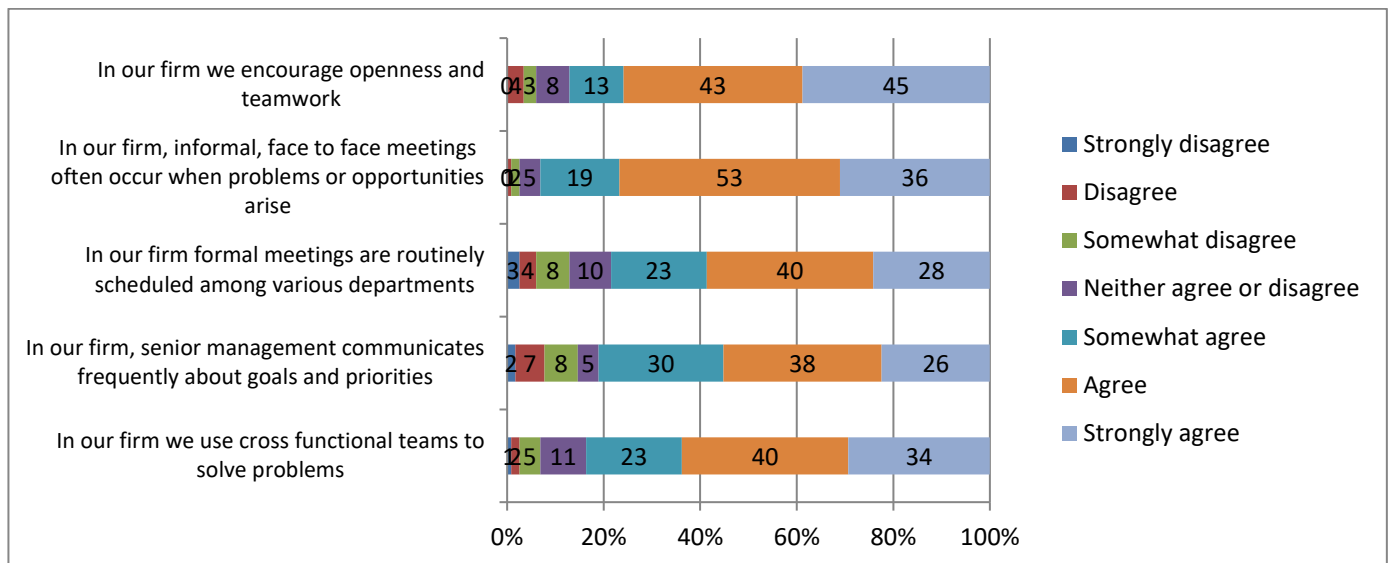


Figure 11: Internal Collaboration

Most respondents indicated that their organisation encouraged openness and teamwork (87%) and face to face meetings that occur when problems or opportunities arise (93%). But when it came to the organisation communicating goals and priorities (81%) and scheduled meetings (78%), these did not rate as highly.

There is certainly nothing wrong with relying on informal collaboration and one may argue that a firm may achieve good performance with such approach. However, we later show that internal collaboration forms a construct of related practices. We also show that these constructs leads to a better supply chain performance. Such findings than suggest that firms that address all practices enjoy superior supply chain performance.

4.5.Strategic Supplier Partnerships

Strong supplier relationships should be a primary focus for a company in sustaining competitive advantage. Firms should leverage supply chain relationships to achieve faster delivery to market, knowledge on product/service quality and flexibility of production and lead times leads to an improved supply chain performance. Respondents were asked to rate seven statements related to their strategic supplier partnerships. The results are presented in Figure 12.

Respondents rated highly that they enter into long term relationships with their suppliers e.g. strategic alliances with 89% stating that they somewhat agree to strongly agreeing with that statement. 88% respondents stated that they are regularly solving problems jointly with their suppliers. However, only 58% of respondents include key suppliers in their strategic planning or goal setting activities. This may suggest that while organisations set

up contracts with their strategic partners they do not go as far integrating them into their strategic planning of their organisation and include them in their long term vision planning.

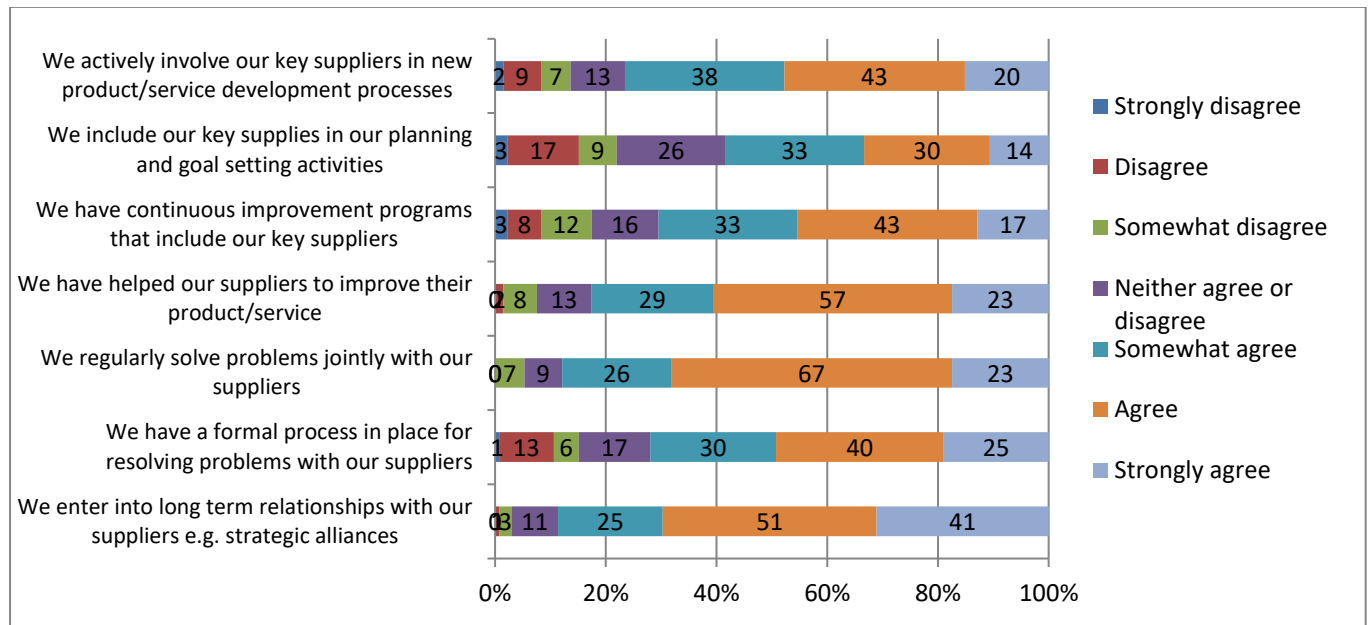


Figure 12: Strategic Supplier Partnerships

4.6. Supply Chain Performance

The survey respondents were asked to assess their organisation's operational performance relative to the best competitor in the market. Respondents rated 10 operational performance criteria using a 1-7 Likert scale with 1= weakest in the industry and 7=strongest in the industry. The results are presented in Figure 13.

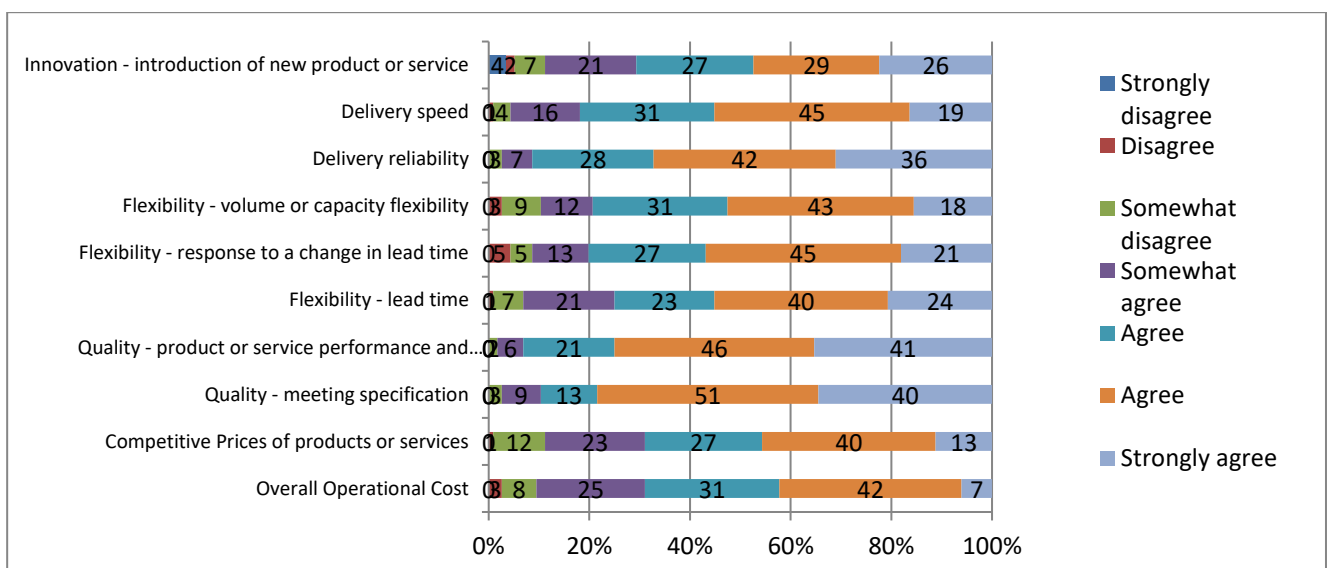


Figure 13: Supply Chain Performance

The results indicate that there is a large group of high performing firms, especially in terms of quality and delivery reliability. Respondents thought they had performed better than their market competitors in quality aspects of

performance such as meeting specification of the product (90%) and the product performance and reliability (93%). Delivery reliability performance rated at 91% and Delivery speed at 82%. Flexibility (response to change in lead time and volume or capacity) also rated highly amongst respondents with 80% stating they were more flexible than their market competitors. However, the sample also contains a significant set of firms who are clearly underperforming.

These results need to be taken with caution. Not every firm need to be a high performer in every single performance dimension and it is perhaps more important that a firm performs well alongside their competitive priorities (a question that we scrutinize later in the report). The findings do however show on which dimension firm performance tend to perform well.

5. Further analysis and discussion

The previous section of the report presented aggregated findings on each question within the overall collaborative practice question. Though such findings are useful in determining what supply chain practices and performance are typical of NZ firms, it does not show relationships between the variables. We have indicated at several places that there are more insightful questions that the data should reveal (i.e. do firms perform well in competitive dimensions that they choose rather than on every single dimension). In this section, we aim to provide more insight on such issues. Our overarching question is whether collaborative supply chain practices lead to superior supply chain performance. To answer this question, we formed constructs for each of the set of collaborative practices and performed a regression analysis to identify which practices impact supply chain performance. The findings are presented in Section 5.1 and 5.2.

5.1.Data Analysis

A regression analysis was performed using IBM SPSS software as the recommended statistical software to use for multivariate analysis (Pallant, 2013; Tabachnick & Fidell, 2013). As a preliminary step, all constructs were subjected to validity and reliability testing. The strength of the relationship between the dependant variable and the independent variables was then determined and an assessment on the importance of each of the independent variables to the relationship. Regression analysis reveals relationships among the variables but does not imply that the relationships are causal. For the purposes of the study, regression was deemed the best analysis to use because each independent variable (Collaborative Supply Chain Practice) is strongly correlated with the dependent variables (Supply Chain Performance) but uncorrelated with other independent variables (collaborative supply chain practices).

Non-response bias was checked through examining the early responses with the late responses of the survey which is also representative of non-respondents (Chen et al., 2012). An independent-samples t-test was conducted to compare the completed surveys for early and late responses. There was no significant different in scores for early ($M = .89$, $SD = .312$) and late ($M = .83$, $SD = .389$); $t(75) = -.578$, $p = .274$ two tailed). The magnitude of the differences in the means (mean difference = $-.059$, 95% CI: $-.262$ to $.144$) was very small (eta

squared = -.0078). Pallant states that .01 is a small effect (Pallant, 2013 p 251) therefore concludes that there is no difference between the early and late respondent groups. For scale reliability, Chronbach alpha values are provided in Table 1. All values are above 0.7 as suggested by Palland (2013).

Table 1: Scale Reliability

Variable	Scale	Item	Chronbach's Alpha
Collaborative Supply Chain Practices	Strategic Supplier Partnerships	We enter into long term relationships with our suppliers e.g. strategic alliances	.807
		We have a formal process in place for resolving problems with our suppliers	
		We regularly solve problems jointly with our suppliers	
		We have helped our suppliers to improve their product/service	
		We have continuous improvement programs that include our key suppliers	
		We include our key supplies in our planning and goal setting activities	
		We actively involve our key suppliers in new product/service development processes	
	Customer Relationships	We are committed to the relationship with our customers	.857
		We are willing to make adjustments to support this relationship	
		We maintain interactive, two way communications with our customers	
		We cooperate with our customers to ensure smooth operations	
		We regularly solve problems jointly with our customers	
	Information Quality	Information exchange between our supply chain partners and us is timely	.803
		Information exchange between our supply chain partners and us is accurate	
		Information exchange between our supply chain partners and us is complete	
		Information exchange between our supply chain partners and us is reliable	
	Internal Collaboration	In our firm we use cross functional teams to solve our problems	.805
		In our firm senior management communicates frequently about goals and priorities	
		In our firm formal meetings are routinely scheduled among various departments	
		In our firm informal face to face meetings occur when problems or opportunities arise	
		In our firm we encourage openness and teamwork	
Supply Chain Performance Variables	Cost	Cost to produce goods and services (that translates to a price reduction)	.725
	Quality	Meeting specifications and meeting product/service performance and reliability	.900
	Flexibility	To increase or decrease product volume and response to a change in lead time	.924
	Delivery	Dependability of delivery – reliability and speed	.866

A check was made to ensure that the correlation between each of the independent variables was not too high (above .70). To prevent multicollinearity, Information Sharing was taken out of the analysis and all of the scores are now under .70. Pallant (2013) and Tabachnick & Fidell (2013) suggest not to include two or more variables with a bivariate correlation of over .70 in the same analysis (Pallant, 2013; Tabachnick & Fidell, 2013). They further suggest omitting one of the variables as the offending variable correlates too highly with others. In this case it correlated highly with Strategic Supplier Partnerships (.720) and Information Quality (.747). As a result of the high bivariate correlation score of Information sharing and it being removed, four independent variables remained and were under .70 being Strategic Supplier Partnerships, Customer Relationships, Information Quality and Internal Collaboration shown in Table 2.

Table 2: Inter Item Correlation Mix (without Information Sharing)

Collaborative Supply Chain Practices	Strategic Supplier Partnerships	Customer Relationships	Information Quality	Internal Collaboration
Strategic Supplier Partnerships	1.000	.538	.692	.651
Customer Relationships	.538	1.000	.561	.601
Information Quality	.692	.561	1.000	.664
Internal Collaboration	.651	.601	.664	1.000

In the Normal P-P Plots the points lay in a reasonably straight diagonal line from bottom left to top right, this suggests no major deviations from normality. The Scatter plots of the standardized residuals, the residuals are roughly rectangular distributed and were all within three standard deviations suggesting that there are no outliers. Outliers were also checked from the Mahalanobis distances that are produced by SPSS. In accordance with Julie Pallant (2013) the maximum Mahalanobis distance for four variables is 18.47 (Pallant, 2013). In this case each variable's maximum Mahalanobis Distance was 18.137 which do not exceed the critical value. There were no unusual cases listed under Casewise Diagnostics and a further check of Cook's Distance where cases that have a value higher than 1 are potentially a problem. All of the variables maximum value was under 1 therefore no cases were excluded from the analysis.

5.2.Evaluation of the Model and Independent Variable Results

The theoretical framework from the literature review has four hypothesised relationships among the collaborative SCM practices and cost, quality, delivery and flexibility. The summary of the hypothesis testing is outlined in Table 3.

Table 3: Multiple Regression Results

Dependent Variable – Supply Chain Performance	R square adjusted (model fit)	Sig.	Beta standardised coefficients
Cost	.174	Non Sig. = .016	IQ - .228 IC - .191 CR - .133 SSP - -.089
Quality	.415	Sig. = .000	IQ - .370 CR - .278 SSP - .049 IC - .046
Flexibility	.237	Sig. = .002	IQ - .351 CR - .244 SSP - -.216 IC - .124
Delivery	.430	Sig. = .000	IC - .312 IQ - .168 CR - .163 SSP - .123

Hypothesis 1: The variance in dependent variable costs which is 17.4% is explained by the collaborative SCM practices. The relationship is **not statistically significant** (sig. = .016; $p > .005$). When comparing the contribution of each collaborative SCM practice Information Quality (.228) and Internal Collaboration (.191) and Customer Relationships (.133) made the most contribution to improved cost efficiency.

Hypothesis 2: The variance in dependent variable quality which is 41.5% is explained by the collaborative SCM practices. The relationship is **statistically significant** (sig. = .000; $p < .005$). When comparing the contribution of each collaborative SCM practice Information Quality (.370), Customer Relationships (.278) made the most contribution to quality.

Hypothesis 3: The variance in dependent variable flexibility which is 23.7% is explained by the collaborative SCM practices. The relationship is **statistically significant** (sig. = .002; $p > .005$). When comparing the contribution of each collaborative SCM practices Information Quality (.351) and Customer Relationships (.244) made the most contribution to flexibility.

Hypothesis 4: The variance in dependent variable, delivery which is 43% is explained by the collaborative SCM practices. The relationship is **statistically significant** (sig. = .000; $p < .005$). When comparing the contribution of each collaborative SCM practice Internal Collaboration (.312), Information Quality (.168) and Customer Relationship (.163) made the most contribution to delivery.

In summary, the results of the hypothesis testing is as follows:

Table 4: Hypothesis Testing Results

Hypotheses		Results
Hypothesis 1:	Do collaborative supply chain practices lead to improved cost efficiency?	Rejected
Hypothesis 2:	Do collaborative supply chain practices lead to improved quality?	Supported
Hypothesis 3:	Do collaborative supply chain practices lead to improved flexibility?	Supported
Hypothesis 4:	Do collaborative supply chain practices lead to improved delivery?	Supported

6. Conclusion: collaborative practices and performance

In order for supply chain networks to compete effectively, they must share information with each other in order to jointly make decisions and problem solve. This must be made with an external perspective including its supply chain partners. The results from this survey found that high performing companies are using collaborative supply chain practices to improve their supply chain management capabilities in Quality, Flexibility and Delivery. These performance capabilities are seen to be “customer centric” outcomes that reflect an organisation’s objective of appealing to a target customer segment that is not necessarily cost focused or price-sensitive. As well as looking at the relationship between supply chain practices and performance, we have also provided descriptive statistics on the current status of supply chain practices in New Zealand.

7. References

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